

ABSTRACT

The characteristics of actuators themselves and the characteristics of controllers for the actuators are dynamically or statically controlled to achieve stable and highly efficient movements. In a stage in which a leg in the flight state is uplifted such that the reactive force from the floor received by the foot sole of the leg is zero, the characteristics of the respective actuators for the knee joint pitch axis and the ankle pitch and roll axes of the leg in the flight state are set for decreasing the low range gain, increasing the quantity of phase lead and for decreasing the viscous resistance of the actuators, in order to impart mechanical passiveness and fast response characteristics. The followup control for the high frequency range may be achieved as the force of impact at the instant of touchdown is buffered.